

REMARKS

The specification has been amended to insert the deposit information for LAB-1. No new matter has been added and entry of the amendment is respectfully requested.

The claims have been amended by inserting the limitation set forth on page 8, line 7-8 into claim 17. This recites a characteristic of the plugged substratum that could not be obtained by excretion of the exopolysaccharide of bacteria naturally occurring in the soil. It is somewhat higher than that of claim 22 discussed at the interview, but is supported and serves the same purpose. Applicants are grateful that it was acknowledged at the interview that this amendment would obviate the outstanding rejection under 35 U.S.C. § 101. In view of this amendment, an alternative limitation discussed at the interview is believed unnecessary. The supply of an isolated culture of bacterium producing an elastic exopolysaccharide that has produced the plugged stratum is only one way to produce this artificially. (Please see page 7, line 22, to page 8, line 24.) This is now the limitation of new claim 26. Support for this claim is found on page 7, beginning at line 22, a section which also describes alternative methods. As the Office has pointed out that inserting "composition of matter" is not helpful in response to the outstanding rejection under 35 U.S.C. § 101, the claims have been restored to be directed to a simpler wording.

No new matter has been added and entry of the amendment is respectfully requested.

Rejection Under 35 U.S.C. § 101

It is believed that this rejection is agreed overcome by the amendment to claim 17, so the following discussion may be moot. The following is included, however, to complete the written record.

In support of this rejection, Office cites a quotation from *Diamond v. Chakravarty*, 447 U.S. 303, 206 USPQ 193 (S.Ct. 1980) which actually appears to support applicants' position. Applicants are not claiming a new mineral discovered in the Earth or a new plant found in the wild, nor are applicants claiming an unknown natural phenomenon. The plugged substratum is a composition made by human activity by deliberately providing a culture of bacteria that secrete an effective biofilm. The characteristics now required could not be obtained by a natural process.

The Office goes on to state that the subject matter of the claims is a "natural composition of matter," but then characterizes it as "a rock formation which has been treated according to the claims of the parent case." The treatment, as is clarified by the present claims, is an activity of a human being, and thus is not a natural formation, any more. The Office is, of course, correct that the claims as previously pending included a rock formation produced by non-isolated bacteria under natural conditions, but this has been corrected.

In view of this amendment, applicants respectfully request reconsideration of this basis for rejection.

The Rejection Under 35 U.S.C. § 112, Paragraph Two

As to the metes and bounds of the invention, applicants are not claiming an entire rock formation absent the biofilm. Only that portion of the rock stratum that contains the biofilm of the required hydraulic conductivity maximum is included within the scope of the claim. This appears clear, but if further explanation is needed, perhaps that can be provided.

There appears also some concern regarding the term “geotextile.” Claim 21 has been amended in accordance with the description on page 6 of the specification. In this embodiment, the geotextile is a synthetic matrix which includes the biofilm.

Applicants point out that the “plugged stratum” is not necessarily a plugged form of a rock formation. It is any barrier inserted into the Earth to provide, as stated in the application, cutoff walls, subsurface liners, and barriers that are inserted into the soil.

Accordingly, applicants believe that this basis for rejection may, in view of the amendment to the claims, be withdrawn.

Conclusion

The claims have been clarified to accurately convey the intention of applicants, that the plugged stratum is an artificially constructed feature that may be embedded in the Earth. Naturally occurring phenomena are not included within the scope of the claim. Amendment has also been made in response to the rejection under 35 U.S.C. § 112, paragraph 2. As these are the only outstanding bases for rejection, applicants believe claims 17-25 are in a position for allowance and passage of these claims to issue is respectfully requested.

Again, applicants wish to thank Examiner Hanley for her thoughtfulness and courtesy at the interview. If there are any remaining issues that might be resolved by telephone, a call to the undersigned would be appreciated.

Addendum and Deposit Information

Applicants submit herewith a chart showing not only the patented parent application but a related series of applications which contain both an issued patent and a pending application. The

pending application is directed to the isolated exopolysaccharide *per se* and to alternative uses thereof. The specification of the co-pending series is similar to that herein with regard to the exopolysaccharide *per se* and the bacterium producing it. The co-pending series of applications is directed to alternative applications of this bacterium and its product.

Although the public availability of the LAB-1 strain has been acknowledged in the Office action of 21 March 2006, for completeness, the deposit information has been added to the specification. Applicants further confirm that, during the pendency of the application, access to the deposit will be afforded to the Commissioner upon request, that all restrictions upon availability to the public will be irrevocably removed upon grant of the patent, that the deposit will be maintained at the ATCC for a period of 30 years, or 5 years after the last request for said deposit or for the effective life of the patent, whatever is longer, that a test of viability of the biological material at the time of deposit has been made and viability confirmed, and that the deposit will be replaced should it ever become unviable.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket No. 524412000710.

Respectfully submitted,

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